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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,465	02/20/2004	Lewis R. Dove	10020706-1	7444

7590 04/23/2008
AGILENT TECHNOLOGIES, INC.
Intellectual Property Administration
Legal Department, DL429
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER

LEE, BENNY T

ART UNIT	PAPER NUMBER
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2817

MAIL DATE	DELIVERY MODE
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04/23/2008

PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LEWIS R. DOVE and ROBERT E. ALMAN

Appeal 2007-4371
Application 10/783,465
Technology Center 2800

Decided: April 23, 2008

Before: JOSEPH F. RUGGIERO, CARLA M. KRIVAK and
KEVIN F. TURNER, *Administrative Patent Judges.*

TURNER, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1-25. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF CASE

Appellants disclose methods and apparatuses that can be used to couple microwave modules. (Spec. ¶ [0001]). A bridge conductor is used to connect conductors of the individual modules and a ground cap shield provides shielding for the combination. (Spec. ¶¶ [0018] – [0020]).

Claims 1-25 are pending in the application. Independent claim 1, which is deemed to be representative, reads as follows:

1. A microwave circuit, comprising:

first and second microwave modules, each of which comprises a conductor sandwiched between upper and lower thickfilm dielectrics, and a ground shield surrounding the upper and lower thickfilm dielectrics in a direction transverse to the conductor; wherein, at a first end of each of the conductors, the conductor extends from beneath a respective upper thickfilm dielectric to terminate at a cut edge of a corresponding microwave module; the microwave modules being mounted with said cut edges facing one another;

a bridge conductor, electrically coupling the first ends of the conductors; and

a ground shield cap, oriented over the bridge conductor and electrically coupled to the ground shield surrounding the upper and lower thickfilm dielectrics of each of the microwave modules.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Arledge	US 6,000,120	Dec. 14, 1999
Cox	US 6,100,774	Aug. 8, 2000
Drapeau	US 6,307,446 B1	Oct. 23, 2001
Dove	US 6,457,979 B1	Oct. 1, 2002
Ishihara	JP 58-92102	Jun. 1, 1983

The Examiner rejected, under 35 U.S.C. § 103(a):
claims 1, 9, 10, 16, and 22-25 as unpatentable over Ishihara and Arledge,

claims 2, 4, 11, 13, 17, and 19 as unpatentable over Ishihara, Arledge, and Cox,

claims 3, 12, and 18 as unpatentable over Ishihara, Arledge, and Drapeau, and

claims 5-8, 14, 15, 20, and 21 as unpatentable over Ishihara, Arledge, and Dove.

The Final Office Action also included a rejection of claims 1-8 and 22 under 35 U.S.C. § 112, second paragraph, as being indefinite, where that rejection was withdrawn by the Examiner in the Answer. (Ans. 2).

While Appellants have indicated the appeal of the rejections of claims 1-25, arguments have only been directed against the rejection of independent claims 1, 9, 10, and 16, where the patentability of claims 2-8, 11-15, and 17-25 is argued solely based on the dependence of those claims on the independent claims. We take claims 1, 9, 10, and 16 to be representative of the argued claims. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Brief, the Answer and the Reply Brief for their respective details. Only those arguments actually made by Appellants have been considered in this decision. Arguments that Appellants did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

ISSUE

Have Appellants shown that the Examiner erred in finding claims 1, 9, 10, and 16 obvious in view of Ishihara and Arledge?

FINDINGS OF FACT

1. The application details that two microwave modules are positioned adjacent to one another on a common substrate, with their cut edges facing each other. A bridge conductor electrically couples the inner conductors at the cut edges. A ground shield cap is formed over the bridge conductor and is coupled to other ground shields. (Spec. ¶¶ [0018] – [0020]; Fig. 5, elements 300, 302, 304, 310, 312, 314, 316).

2. Ishihara discloses methods for connecting triplet lines. Two sheets of circuits have notches taken out of ends of the sheets such that the central conductors of the circuits are exposed. A bottom-metalized segment of dielectric material, sized to fit into the notches, is introduced and creates an electrical connection between the central conductors. The segment is secured in the notches through adhesive, solder or through a mechanical fixing method. (P. 5, ll. 5-20; Fig. 3, elements 1-7, 11, 51, 100 and 200).

3. Arledge discloses a method of making a coaxial transmission line on a printed circuit board. A metal strip forms the bottom part of the shield, which is covered by a first layer of dielectric material. A signal conductor is then formed on the first dielectric layer and a second layer of dielectric material covers the signal conductor and the first dielectric layer. Two parallel trenches are formed in both layers of dielectric material and metal is plated in the parallel trenches to contact the metal strip to create a shield. (Abstract; Col. 4, ll. 5-13; Fig. 1).

4. Cox discloses a microstrip that provides a connection to a coaxial transmission line. In one embodiment, a cantilevered tab of a transition is

replaced by a wire or ribbon. (Abstract; col. 4, ll. 39-46; Fig. 5, element 58B').

5. Drapeau discloses planar interconnects using compressible wire bundle contacts. A compressible wire bundle connects the planar conductors to provide an RF connection. (Abstract; col. 3, ll. 14-20; Fig. 2, element 80).

6. Dove discloses a shielded attachment of a coaxial connector to a transmission line. The attachment may include a cover/shield that is secured into place by solder or conductive adhesive, and the supporting layer can include KQ dielectric material. (Abstract; col. 3, ll. 44-48; col. 5, ll. 17-22).

PRINCIPLES OF LAW

The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If that burden is met, then the burden shifts to the Appellants to overcome the prima facie case with argument and/or evidence. *In re Mayne*, 104 F.3d 1339, 1342 (Fed. Cir. 1997). “Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007).

The claims on appeal should not be confined to specific embodiments described in the Specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (*en banc*). During *ex parte* prosecution, claims must be

interpreted as broadly as their terms reasonably allow since applicants have the power during the administrative process to amend the claims to avoid the prior art. *In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir. 1989).

ANALYSIS

Appellants argue that Ishihara fails to disclose specific elements of the independent claims, such as a ground shield surrounding the first and second dielectrics transverse to the conductor and a ground shield cap coupled to the upper or second shield of the microwave circuits. Additionally, Appellants argue that Arledge fails to disclose other specific elements of the independent claims, such as the conductor extending from beneath the upper dielectric to terminate at a cut edge of the module, the cut edges facing one another and providing a ground shield cap over the conductor coupling and attaching that cap to the other ground shields. (App. Br. 12-19). However, as identified by the Examiner, (Ans. 7), the elements of the claims found lacking in one of the individual references can be found in the other of the references. (FF. 2-3). For example, the rejection applying Ishihara and Arledge acknowledges that having a ground shield surrounding the first and second dielectrics transverse to the conductor is not disclosed in Ishihara and relies on Arledge to teach such an element. (FF. 3). As such, we find all of the elements of claims 1, 9, 10, and 16 to be taught by Ishihara and Arledge and need only address the propriety of the combination thereof to determine whether the rejection should be sustained.

Appellants argue that neither Ishihara nor Arledge provides any suggestion or motivation, without relying on improper hindsight, to combine the references. (App. Br. 12-19, Reply Br. 2-3). Appellants argue that “the

Examiner has not identified either an explicit or implicit suggestion or motivation in one or both of Ishihara and Arledge to modify the references.” (Reply Br. 2). As the Examiner has indicated, (Ans. 8), the suggestion or motivation need not come expressly from the references and can be derived from common knowledge in the art, such as the shielding of all exposed conducting surfaces provides improved isolation and optimizes prevention of signal leakage. Additionally, the Examiner provides that the benefits of additional lateral edge shielding, as described in Arledge, would have been applied to the structure of Ishihara. (Ans. 4). As such, we do not find that the combination of Ishihara and Arledge relies on improper hindsight reasoning and we find that one of ordinary skill in the art could have combined Ishihara and Arledge based on the provided motivation. Thus, we find that claims 1, 9, 10, and 16 were properly found to be obvious in view of Ishihara and Arledge.

Additionally, Appellants have raised no arguments with respect to claims 2-8, 11-15, and 17-25 other than their dependence on independent claim 1, 9, 10, and 16. Thus, we affirm the rejections of those claims as well.

CONCLUSION OF LAW

We conclude that Appellants have not shown that the Examiner erred in rejecting claims 1-25, and we affirm the Examiner’s rejection of those claims under 35 U.S.C. § 103(a).

DECISION

The decision of the Examiner is affirmed.

Appeal 2007-4371
Application 10/783,465

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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